REMARKS

Claims 1 and 5-7 have been rejected under 35 USC §102(b) as anticipated by Gerwers (U.S. Patent No. 5,000,533), while Claims 1 and 2 have been rejected under 35 USC §103(a) as unpatentable over Cole (U.S. Patent No. 3,740,115) in view of Gerwers; and Claims 3 and 4 have been rejected as unpatentable over Cole in view of Gerwers, and further in view of Lerner (U.S. Patent No. 4,541,698). However, for the reasons set forth hereinafter, Applicants respectfully submit all claims remaining of record in this application (including new Claim 8) distinguish over the cited references, whether considered separately, or in combination.

The present invention is directed to a display arrangement for displaying optical information in an observer's field of view. For this purpose, the display apparatus includes an image source, an image transmission device and an eyepiece. These elements can be worn on the observer's head, attached, for example, to a headband or a helmet by means of a fastening device.

As depicted in Figures 1 and 2 of the drawings, the image generated by an image source 10 is coupled to the eyepiece 1 by means of an optical fiber bundle 5 which is encased in a sheath 6 of bendable material, which has a mechanical memory effect. That is, it remains in a shape assumed as a result of bending. The entire device is clamped or supported on, for example, a helmet, by a clamp

16, with the optical fiber bundle 5 and sheath 6 bent around in an orientation such that the eyepiece is suspended in the observer's field of view.

It is apparent that with such a device, it is possible to position the eyepiece in front of the viewer's eye by appropriately bending the bendable sheath 6. However, in so doing, it is also apparent that as a result of such bending, the image may not be in a proper or desired orientation within the eyepiece, such that it appears skewed to the observer. In order to accommodate this concern, an adjusting device including a holding part 7 and an adjusting screw 15 is provided, which permits the picture transmission device (consisting of the optical fiber bundle and related couplings) to be secured in its momentary position, following a torsional adjustment thereof. Such adjusting mechanism between the image source 10 , and the image transmission device adds an additional degree of freedom which allows the image to be adjusted to and fixed in a desired orientation within the eyepiece, as noted in the specification at page 5 paragraph [0017].

The latter feature of the invention is included in the last paragraph of Claims 1 and 5, which recites the provision of a setting mechanism between the picture source and the picture transmission device, whereby the picture transmission device can be secured in its momentary position after a torsion movement of the fiber optics section. This feature of the invention is neither taught nor suggested by any of the cited references.

The Gerwers reference in particular discloses a protective sleeve, into which a conventional fiber optic cable can be inserted, so that a viewer may observe a process which is being performed within a high pressure or high vacuum environment, within a containment vessel. For this purpose, a sleeve 10 is connected between a wall mounting arrangement 16 and a viewing section 50, which is arranged in a desired position within the chamber and held in a viewing position. Thus, a conventional fiber scope or video scope 70 may be inserted into the sleeve and used to inspect and monitor events inside the interior of the chamber C, as discussed at Column 4, lines 33-40. Portions of the sleeve may be made, for example, of a shape-memory alloy or laminate. As is apparent from the foregoing brief description, the Gerwers et al reference contains no setting mechanism arranged between the picture source and the picture transmission device, as recited in Claim 1.

The Cole reference, on the other hand, discloses a flexible optical fiber viewing system which is capable of dynamically enhancing images which are relayed in the fiber optic system. In particular, because the image is transmitted in the form of a matrix which includes a very large number of dots of light, spot and line effects ordinarily occur as images of the boundary lines between individual fibers, and the like, as noted at Column 4, lines 8-10. (See Column 2, lines 53-57.) To eliminate this deficiency, an image which is acquired by an objective lens 12, after having been processed in an image intensifier 14, is coupled into an optical fiber 22 by means of a tapered bundle 32 that is mounted off-centered on a ring gear 38. The latter is rotated so that the images emitted

from the face 36 of the tapered bundle are caused to "nutate" over the image receiving end 26 of the bundle 22. (See Column 3, lines 11-22.) At the other end of the fiber scope 22, a similar arrangement is provided, whose motion is synchronized with that of the tapered bundle 32 and ring gear 38, such that the image is once again stabilized. In this manner, dynamically enhanced images, having greater than usual resolution, can be achieved by eliminating the spot and line effects referred to previously. (See Column 4, lines 1-14.)

The Office Action states at page 4 that Cole discloses a setting mechanism arranged between the picture source and the picture transmission device in which the picture transmission device can be secured in its momentary position after a torsion movement of the fiber optics section, referring to Column 2, lines 63-68. The referenced portion of the specification, however, simply describes the tapered bundle 32, which as noted previously rotates relative to both the fiber scope 22 and the image intensifier 14, for the purpose of introducing a "nutation" into the image provided to the fiber scope 22. Accordingly, it does not secure the picture transmission device (which includes the fiber optics section itself) in a momentary position after a torsion movement of the fiber optics section. Indeed, its purpose is the opposite, being to introduce motion, and is unrelated to securing the position of the picture transmission device, including the fiber optics section.

Finally, the Lerner reference discloses a remote viewing arrangement for use in conjunction with a camera, which includes an eyecup mounted to a helmet

or headgear adjacent to the photographer's eye. In this apparatus, the picture source is the viewfinder of the camera, to which the picture transmission device is fixedly clamped by means of a fitting 11, as described, for example, at Column 2, lines 4-11. (See also Column 2, lines 62-67.) Accordingly, as is the case with both Gerwers and Cole, the Lerner reference also fails to teach or suggest a setting mechanism arranged between the picture source and the picture transmission device by which the picture transmission device, including the fiber optic section, can be secured in a momentary position after a torsional movement of the fiber optics section.

Accordingly, Applicants respectfully submit that independent Claims 1, 5 and 8 as contained in the present application distinguish over all of the cited references, and are allowable.

In light of the foregoing remarks, this application should be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and

please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #951/49937).

Respectfully submitted,

Gary R. Edwards
Registration No. 31,824

CROWELL & MORING, LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
GRE:kms/80437